Horizontal Wells 2017, 2017

The analysis of horizontal drilling using for deposits at the late stage of development

Shajmukhametova A., Smolina O., Usmanov S.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

The paper contains an analysis of low specific oil production from horizontal wells at the date of analysis with a review of geological and technological factors affecting the efficiency of each well separately. The object of analysis is an oil field in Tatarstan, where 8 horizontal wells were drilled to produce bobrikovskiy horizon sand reservoir. Detailed analysis of field development parameters of each well shows significant efficiency of horizontal drilling for horizon considered after 45 years of field development. However, the reducing of performance for the horizontal wells appeared because of changing of operating parameters of wells (depression increasing more then 1.0-1.5 MPa). The range of depression given below is maximal for the well profile analyzed and for this reservoir. This is caused by depth of reservoir (less than 1000m), rock permeability (can be more than 1 Darcy), reservoir rock, stress-strain state along the well which reacts strongly on energy changes in zone of horizontal part and leads to the destruction of cement sheath and its connection with the casing and the rock. Finally, it's concluded, that efficiency of horizontal drilling depends strongly on the quality of geological and technological analysis conducted for both, whole deposit and zone of drilling.

http://dx.doi.org/10.3997/2214-4609.201700473